

Empirical Investigation into Collaborative Model Development for Resolving Tenure Conflicts in Forested Regions

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Tenure conflict is a challenge and dilemma experienced by many countries. The dilemma is because on the one hand, there is an interest in preserving forests, on the other hand, there are claims to land ownership in forest areas long before they are designated as forest areas. The next dilemma is that the party claiming property rights is generally used for agricultural activities which have been the main livelihood for generations. This study tries to examine the incidence of tenure conflicts in various countries to map how these conflicts occur, the factors that encourage land tenure approaches in resolving them, and government (state) policies. Using secondary data resulting from a review of previous research published in reputable international journals and other reliable and credible reports. The review study model used is systematic with meta-synthesis. Apart from journals, secondary data comes from other reliable and credible reports. Data and materials consist of 67 reputable international journals and 14 books/reports published in the last ten years. The results of the analysis found that tenure conflicts were caused by many things, motivated by the ownership and interests of natural resources specifically for agriculture for the lives of the surrounding community. An interesting fact is that the handling of tenure conflicts in several countries is considered successful, marked by the provision of access to forest management ownership. Other studies such as those conducted in Latin America, Africa, and Asia offer partnership models to resolve tenure conflicts. Similar things have also been done in Indonesia but have not been completely successful. Learning from this, this research offers a model for developing forest management partnerships to resolve tenure conflicts in forest areas, while also accommodating special agricultural activities for local communities. The model offered theoretically complements and/or perfects the models used so far which have proven unsuccessful in resolving conflicts. The practical implications are a reference for the government and interested parties to resolve tenure conflicts so that forests are maintained and can provide benefits for community welfare.

Keywords: Collaborative, Model Development, Resolving Conflict, Tenure, Forest, Tenure conflicts, Forest preservation, Land ownership claims, Agricultural activities, Livelihood.

INTRODUCTION

Forests are areas with a unified ecosystem dominated by trees. Referring to the dominance of trees, experts agree that forests must have a high density (Parker *et al.*, 2009; and Karousakis and Coffee-Morlot, 2007). The existence of forests is very important in supporting human life, because forests function to control ecosystems, and climate, and provide important resources for humans and other living creatures, as well as other benefits. If there is damage (loss) to forests, then you can be sure and imagine how difficult life will be.

Forest sustainability needs to be maintained so that the ecosystem and the resources produced can be enjoyed at all times. Therefore, Zhao *et al.* (2023); and Gilliam (2016) emphasized that management must be measurable and based on correct mechanisms based on existing regulations. What is no less important is to accommodate the community (around the forest) firmly so that they can consider what needs to be done and what has been done.

The world community has issued many statements regarding forest management which regulate forest management rights by communities who are given permits in the form of private forests and village forests. A model like this is needed to

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bridge the relationship between forest protection obligations and community use (Winarno *et al.*, 2023; Boaheng, 2023; and Ogunrinola *et al.*, 2020). The space provided for community use of forests by various parties allows exploitation to occur which disrupts the forest ecosystem as an area that supports community needs. At the same time, there is a dilemma because on the one hand, there is an obligation to maintain the integrity of the forest in the form of measurable use and by applicable legal mechanisms, but on the other hand the community needs a source of livelihood.

Quoting from several reports such as the Food and Agriculture Organization/FAO, (2006); FAO (2020); The Little REDD+Book (Parker *et al.* 2009); and Commitiklim.id, (2021) that forests are currently faced with various problems that may continue to occur in the future. The problems in question are illegal logging, encroachment, and land use change or conversion into agricultural land and plantations. Continued Lal (2004); Xu *et al.* (2007); and Zhao *et al.* (2023) stated that forestry problems often arise in areas that are motivated by anthropogenic factors from use, management, control, and use without legal approval from the management. This indication of an open area caused by anthropogenic factors then needs further treatment because it is identified as a tenure conflict.

Reporting from Winarno *et al.* (2023); Holland *et al.* (2022); Chopra *et al.* (2022); Franklin *et al.* (2016); Malhi *et al.* (2014); Hansen *et al.* (2013); Steffen *et al.* (2011); and Soares-Fihlo *et al.* (2006) tenure conflicts over land control occur in several countries, with quite a high conflict intensity and are likely to occur at any time. In previous research, tenure conflicts were not only found in developing countries such as Asia, Latin America, and Africa but also developed countries.

Several studies that have been summarized regarding tenure conflicts include Camara *et al.* (2023) in Brazil. Larson *et al.* (2023) in Peru and Uganda. Li *et al.* (2023) in China. Rakotonarivo *et al.* (2023) in Madagascar. Tuan (2023) reports the same in Vietnam and Jenke & Pretzsch, (2021) in Thailand. Then in Indonesia, among others, Madiong *et al.* (2023); Megawati *et al.* (2023); Nuraeny *et al.* (2023); Abhimanyu, (2023); Handayani *et al.* (2022); Sardjo *et al.* (2022); Wulandari *et al.* (2021); Syahputra *et al.* (2020); Senoaji *et al.* (2020); Saputra and Dewata, (2019); Fisher *et al.* (2017); Riggs *et al.* (2016), Purnomo & Anand, (2014); Gamin *et al.* (2014); and Yasmi & Schanz, (2010).

Several of their studies confirm that if tenure conflicts are allowed to drag on, they can threaten sustainability and hinder sustainable forest management models. As reported by the United States Agency for International Development (USAID) in Bennett *et al.* (2019) tenure conflicts, including agrarian, have consequences in forest encroachment, ownership disputes, territorial boundary conflicts, as well as illegal logging and land clearing will continue to occur. Therefore, Fisher *et al.* (2017) emphasized that management

down to the site level (in Indonesia by KPH) is required to be more responsive early in resolving tenure conflicts. Then Camara *et al.* (2023); Li *et al.* (2023); and Wulandari *et al.* (2021) emphasize considering the existence and interests of forest communities as an important part of land conflict resolution programs.

To resolve tenure conflicts, Wulandari *et al.* (2021); Senoaji *et al.* (2020a); Saputra and Dewata, (2019); and Purnomo and Anand, (2014) proposed a partnership model for resolving tenure conflicts for effective forest management cooperation. Gamin *et al.* (2014); Fisher *et al.* (2017) proposed a more proactive and collaborative approach. Camara *et al.* (2023); Syahputra *et al.* (2020) proposed formal and informal institutional approaches in collaborative practice. Li *et al.* (2023); Nuraeny *et al.* (2023); Sukirno *et al.* (2023); and Handayani *et al.* (2022) suggest aspects of legal certainty and management and utilization, but then Li *et al.* (2023) pay attention to flexibility by paying attention to local community access to forest use.

Several studies report that collaboration or partnership models have been implemented and succeeded in several countries such as Peru and Uganda (Larson *et al.* 2023). However, it was reported that this had not been successful and there were difficulties in its implementation. Previously, Siry *et al.* (2015) stated that developed countries are more advanced in managing community forests, where large forests are more dominantly managed than state-owned forests, while in developing countries the number is still relatively small. Larson *et al.* (2023) stated that such a model is even possible in Indonesia because it has a high level of social identity and historical aspects of ownership, giving rise to social dynamics. The handover and recognition of rights to the community requires special attention because research by Li *et al.* (2023) states that there is no significant correlation between the partnership management model and the rate of forest land clearing. Another fact was discovered by Sardjo *et al.* (2022) that granting access to management rights opened up space for their "recognition" of the land. This gap then provides space for further research using keywords put forward by previous researchers that refer to the collaborative approach model in resolving tenure conflicts in forest areas, so this research tries to reconstruct it to offer the development of a collaborative model for resolving tenure conflicts.

The aim of this research begins by uncovering current forestry challenges that lead to tenure conflicts, then continues by uncovering what tenure conflicts look like, such as the causes and patterns of conflict. The next goal is to reveal the facts of tenure conflicts in the world, and ultimately produce a model of what should be done to resolve tenure conflicts. Practically, it becomes a reference for the authorities to reformulate conflict resolution models, and theoretically develop models that are commonly used so far.



MATERIALS AND METHODS

This study uses secondary data, sourced from the results of reviews of journal review studies and similar reports from related institutions. A review study is an analytical activity that can take the form of a review including criticism of research being conducted on a specific topic that is part of a scientific field. Quoted from [Lewin, \(2008\)](#); [Francis & Baldesari, \(2006\)](#); [Kitchenham, \(2004\)](#); and [Perry & Hammond, \(2002\)](#) that review studies in some cases are often called systematic reviews with a meta-synthesis model.

The implementation stage with a systematic review approach with descriptive meta-analysis based on quantitative data refers to the steps mentioned by [Francis and Baldesari \(2006\)](#), namely: 1) identifying emerging topics or empirical facts that researchers are currently studying; 2) searching relevant literature; 3) selection of relevant research results; 4) selecting quality research results (screening and selection); 5) extraction of research data; 6) Synthesis of research results; and 7) Presentation of research results in research reports.

Based on these stages, the topic raised as the object of analysis is the current development of forestry with all its dynamics, the most highlighted dynamic is tenure conflict. Search results and selection of relevant research are based on publications in reputable journals and reports from relevant, credible, and trustworthy institutions (steps in points 5, 6, and 7).

Data search (secondary) was carried out on references to international journals, national journals, and books or reports published online (Google). The search keywords are "current forestry with all its environmental impacts", then "tenure conflict in forest areas", and "tenurial conflict resolution approach models". The next search technique is to limit the period, namely taking the year of publication within the last ten years. Finally, 54 reputable international journals were obtained; 13 accredited national (Indonesian) journals; and reports from 14 related institutions including FAO, the Center for International Forestry Research (CIFOR), the Ministry of Environment and Forestry of the Republic of Indonesia in collaboration with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), USAID, and online newspapers. The following data regarding secondary materials is presented in Figure 1.

Judging from country coverage, from the mapping results, journal publications are spread across Latin America, Africa, and Asia, including Southeast Asia. Countries in Latin America such as Brazil and Peru, then Africa in Uganda, Madagascar, and Kenya. The Asian hemisphere is China, India, and generally Southeast Asia.

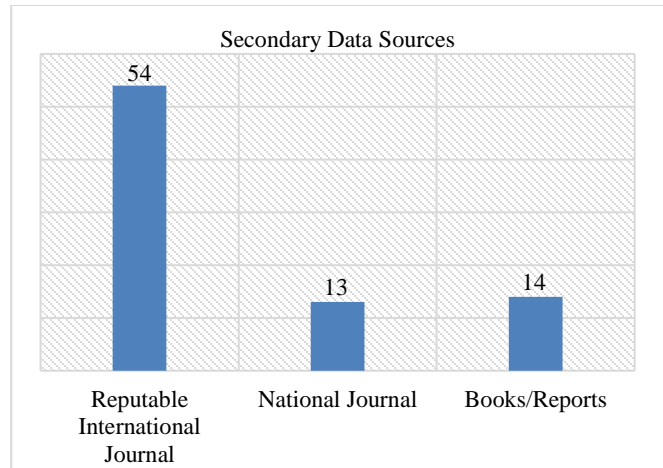


Figure 1. Secondary Data Sources.

Each journal and other secondary sources (reports) are then synthesized for description. The results of the analysis are presented in the form of graphs and other similar models.

RESULTS

Global Forestry Facts: The Food and Agriculture Organization (FAO) reports that forests cover about 31% of the total global land area. The 31% figure is equivalent to 4.06 billion ha ([FAO, 2020](#)). Then [FAO, \(2020\)](#) continued that half of the forest area is still relatively intact, and more than a third is primary forest (forest with native species that grow naturally, there is no indication of human activity and ecological processes are not significantly disturbed). The distribution of forest areas is not evenly distributed throughout the world, more than half, or around 66% is in 10 countries as seen in Figure 2.

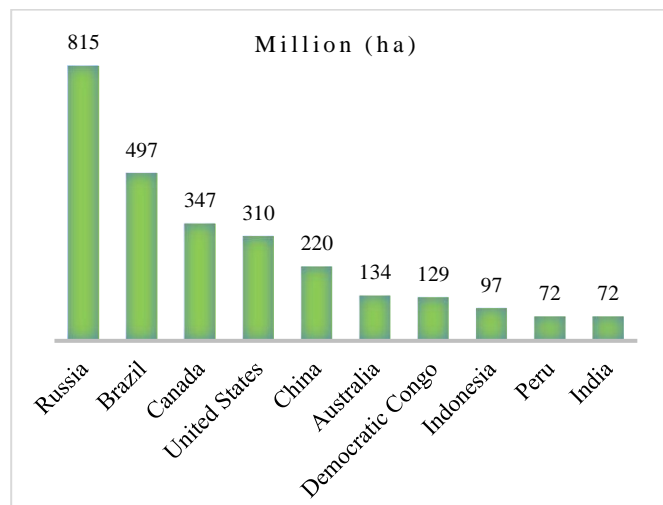


Figure 2. Ten Countries with the Largest Forest Area in the World (Source: [FAO, 2020](#))



The Russian Federation is the largest with around 815 million hectares or 20% of the world's total area, followed by Brazil with 497 million hectares or 12% of the world's total area. Indonesia contributes around 2.3% of the world's total forest area, around 92 million ha to be precise (FAO, 2020).

Reports issued by FAO, (2006) and The Little REDD+ Book (Parker *et al.* 2009) state that tropical forests cover around 15% of the world's land surface. The widest distribution of tropical forests is spread across Latin America, Africa, and Asia. The largest part of Latin America is occupied by Brazil, which is generally located in the Amazon region, around 497 million ha or 54.32% of the total area of tropical forests in the world. Amazon forest area also stretches to other countries such as Peru and Colombia. Peru has a tropical forest area of around 7.76% of the total tropical forest area; then Colombia has around 1.86%. Part of Africa, to be precise, is the Democratic Country of Congo, with an area of around 14.10% of the world's total tropical forest area. The Asian part is occupied by India with an area of around 97 million ha or around 10.60% of the world's total tropical forest area, then India around 5.68% (see Table 1).

Table 1. Distribution of the World's Tropical Forest Area.

No.	Country	Estimated Area (Million ha)	%
1.	<i>Latin America</i>		
a.	<i>Brazil</i>	497	54.32
b.	<i>Peru</i>	72	7.76
c.	<i>Columbia</i>	17	1.86
2.	<i>Africa</i>		
	<i>Democratic Congo</i>	129	14.10
3.	<i>Asia</i>		
	<i>Indonesia</i>	97	10.60
	<i>India</i>	52	5.68
4	<i>Other</i>	52	5.68
	Total Area of Tropical Forests	915	100.00

Source: FAO (2020)

The world loses 10 million hectares of forest every year. Trees in the forest are cleared for various purposes ranging from mining, plantations, and so on. As a result, forests experienced around 96 percent deforestation, generally occurring in tropical forests. One of the most astonishing facts about deforestation is that forest loss releases 4.8 billion tons of carbon dioxide into the atmosphere every year. This amount is equivalent to almost 10 percent of human emissions every year. NASA researchers say that deforestation that is occurring in Kalimantan is rapidly contributing to a rapid increase in global carbon emissions 3.75 million hectares of primary tropical rainforest were lost in 2021 alone. This results in 2.5 billion tonnes of carbon dioxide emissions (Kompas.com, 2023).

Brazil and Indonesia account for almost half of tropical deforestation. One-third of tropical deforestation occurs in Brazil alone. That's about 1.7 million hectares every year. Brazil and Indonesia are countries with the largest and most diverse tropical forests in the world. Forest loss also affects biodiversity. The populations of a number of animals observed have decreased by an average of 68 percent. For example, on the Indonesian island of Kalimantan, endangered orangutans have lost almost 80% of their population in the last 50 years (Kompas.com, 2023).

Not yet finished with overcoming the threat of deforestation, another problem that is a dilemma in forest management is tenure conflict. The results of analysis from various journals show that in the last 10 years, the intensity of tenure conflicts has increased. There are at least nine countries where there are tenure conflicts in forest management, namely Brazil, Peru, Uganda, Madagascar, Kenya, China, Vietnam, Thailand, Cambodia and Indonesia. The highest conflict intensity occurred in Indonesia.

Tenure Konflik: The results of the synthesis of 47 journals found that tenure conflicts in forest areas involve various interested parties, namely: the government, communities, companies, and non-governmental organizations. The government has an interest in securing state forests, the community has an interest in meeting their social and economic needs, companies have an interest in making profits, and non-governmental organizations have an interest in defending community rights. The involvement and interests of tenure conflicts in forest management are simply illustrated in Figure 3.

Based on the object of the dispute, forest area tenure conflicts can be grouped into several conflict typologies, namely community and government conflicts, community and company conflicts, conflicts between forest management permit holders, conflicts between communities, and conflicts between governments (Figure 4).

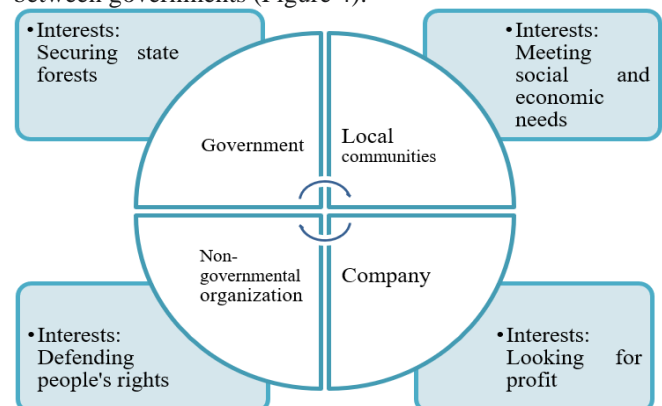


Figure 3. Tenurial Conceptual Framework According to Parties and Interests (Source: Constructed from Fisher *et al.* 2017; and Maring, 2013)



Based on the object of the dispute, forest area tenure conflicts can be grouped into several typologies of conflict, namely community conflict with the government, community conflict with companies, conflict between forest management permit holders, conflict between communities, and conflict between governments (Senoaji *et al.*, 2020). Continue Senoaji *et al.* (2020); and Safitri *et al.* (2011), the typology of forestry conflicts is classified into several categories, namely: (1) conflicts between indigenous peoples and the government (ministries/institutions in the forestry sector); (2) conflict between the community and ministries/institutions in charge of forestry and land affairs; (3) conflict between the transmigrant community and the forestry ministry/institution and land ministry/institution; (4) conflicts between village farmers/immigrants and forestry ministries/institutions and local governments; and (5) conflicts between land brokers, farming communities, and the government (forestry, land, and local government). The complete conflict typology is illustrated in Figure 4.

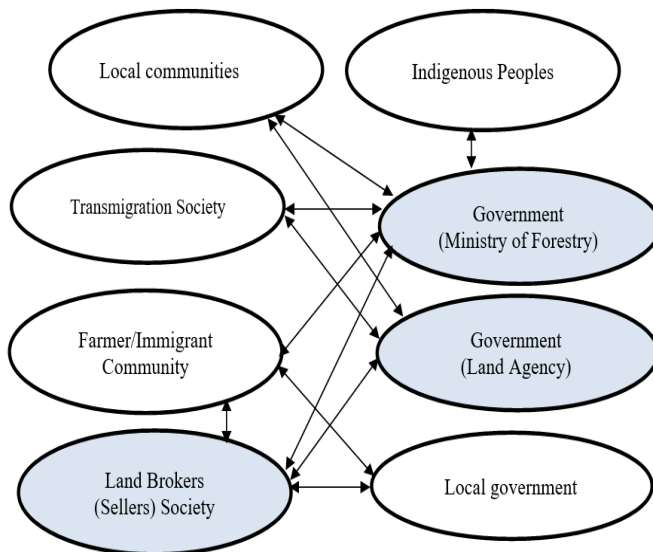


Figure 4. Tenorial Conflict Typology (Source: Constructed from Senoaji *et al.* 2020; and Safitri *et al.* 2011)

Studies on Tenorial Conflicts in the World: Synthesis results from 46 journals and proceedings that highlight tenure conflicts in the last decade which routinely discuss tenure conflicts in 10 countries. Starting from Latin America such as Brazil and Peru. Africa in Uganda, Madagascar, and Kenya. The Asian regions that are the focus of discussions on tenure conflicts are China, Vietnam, Thailand, Cambodia, and most of Indonesia. The main points of the study are presented in Figure 5.

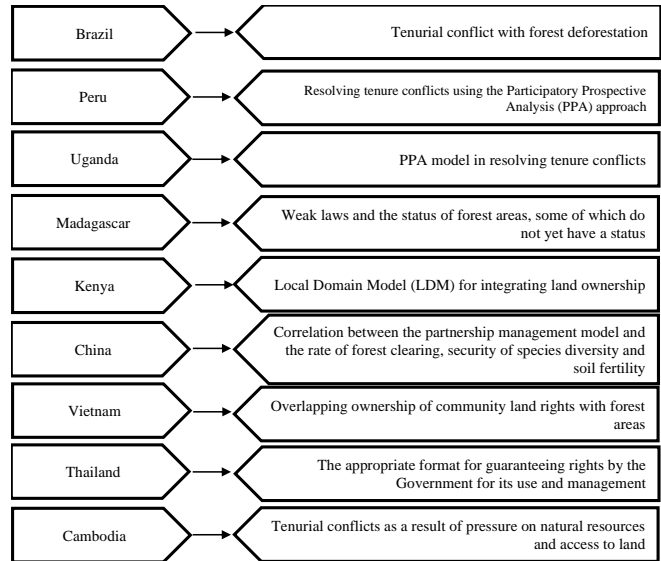


Figure 5. Mapping of Tenorial Conflict Study Themes in Several Countries (Source: Author, 2024)

DISCUSSION

Current Tropical Forestry Challenges: Deforestation and forest degradation continue to occur at an alarming rate, especially in tropical forests. Quoted from FAO, (2020), since 1990, an estimated 420 million ha of forest have been lost due to land conversion to other land uses. In the period 2015 to 2020, the rate of deforestation reached 10 million ha/year. As a result, since 1990 the area of primary forest worldwide has decreased by more than 80 million ha. One of the causes is agricultural expansion. Large-scale commercial agriculture (mainly cattle farming and soybean and oil palm cultivation). Global deforestation and forest degradation between 2000 and 2010 caused a decrease in tropical forest area of around 40%, which was generally caused by large-scale commercial agriculture. Then local subsistence agriculture accounts for 33% of deforestation and tropical forest degradation (FAO, 2020). Around 2000, the world's tropical forests covered an area of 14.58 million km². According to the Rainforest Foundation Norway (RFN) report, the area of tropical forest remaining in 2019 was 952.96 million ha, this figure decreased by around 505.09 million ha compared to the area in 2000 (Komitmeniklim.id, 2021).

The area of tropical forests contributes to providing and reducing carbon (Lal, 2004; Xu *et al.* 2007; Zhao *et al.*, 2023), up to 25% of carbon in the terrestrial biosphere. Forests are a habitat and support for various diverse plant and animal species (Zhao *et al.*, 2023; and Gilliam, 2016) that live in the soil, understory, and canopy, which are estimated to be around 3 million species (FAO, 2020).



Deforestation and forest degradation that occur in tropical forests result in significant loss of forest biodiversity. As of December 2019, 20,334 tree species had been included in the Red List of Threatened Species (FAO, 2020), of which 8,056 species were assessed as globally threatened (Critically Endangered, Threatened, or Vulnerable). Then more than 1,400 tree species are assessed as critically endangered and require immediate conservation action (FAO, 2020).

This phenomenon occurs throughout the world, according to Winarno *et al.* (2023) as a result of various natural and human-made disturbances, including in many countries with tropical climates. For example, in African regions such as Nigeria, as reported by Ogunrinola *et al.* (2020), tropical rainforests that are rich in species are under heavy pressure to meet the needs of forest and non-forest products, causing severe damage to most forests. Ogunrinola *et al.* (2023) added that forest damage occurred due to encroachment. A similar thing also happens in Ghana, where forest degradation causes air pollution, unmanaged water and land degradation (Boaheng, 2023).

Another fact is that deforestation in tropical areas of Latin America has been and continues to be a serious environmental problem. Soares-Fihlo *et al.* (2006) estimate that there will be a loss of forest cover in the Amazon basin of up to 40% by 2050. Due to this loss of forest cover, there will be an increase in global annual economic losses of 0.4% (Hansen *et al.* 2013; and Malhi *et al.*, 2014). If this continues, it will disrupt changes in biogeochemical cycles and loss of biodiversity (Chopra *et al.* 2022; Steffen *et al.*, 2011; and Franklin *et al.*, 2016). In the case of Indonesia, the same thing and pattern also occur, where changes (decrease) in tropical forest areas occur as a result of land conversion and expansion of built-up areas (Winarno *et al.*, 2023; Siscawati, 2017; and Giz, 2016). Forest degradation also occurs in cities, due to urbanization which results in excessive use of space. Chopra *et al.* (2022) reported that the addition of urban forests (Green Open Space) has not been able to balance the expansion of built land use. Cities, which serve as repositories of biodiversity and provide habitat for many wildlife, are starting to be negatively impacted by urbanization.

Degradation and deforestation have the potential to open up space for land control by communities who are under pressure to meet their living needs. This fact was found in Brazil as reported by Camara *et al.* (2023) in their research, that Brazil is still struggling with forest deforestation and tenure conflicts in forest areas. Camara *et al.* (2023), continued that tenure conflicts in the long term contribute to forest deforestation, therefore early efforts from the Government are important in achieving the goal of controlling deforestation through conflict resolution so that both interests work together.

Tenure Conflict: Conflict is defined as a struggle between two or more parties, either individuals or groups, which is usually caused by differences in values, views, activities, status, and scarcity of natural resources (Marina and

Darmawan, 2011). Conflict occurs due to clashes between two or more parties which are caused by differences in socio-cultural conditions, values, status, and power (Fuad and Maskanah, 2000); or perceptions regarding differences in interests (Pruitt & Rubin, 2009). Conflict can occur due to rapid socio-cultural changes in traditional beliefs and life, which causes people to lose their identity and feel uprooted from their cultural roots, which makes them apathetic and aggressive (Senoaji *et al.*, 2020).

Conflicts related to the control of land and natural resources are called tenure conflicts (Senoaji *et al.*, 2020; Sylviani & Hakim, 2014). Natural resource conflicts occur due to the existence of natural resources becoming increasingly scarce while those with an interest remain the same or even increase (Kartodihardjo, 2014). Land tenure conflicts arise from different perceptions and interpretations between parties regarding their rights to land and forest resources (Safitri *et al.*, 2011).

Tenure conflicts that occur in forest areas mean that there are conflicts in control of land and resources in forest areas, such as conflicts between forest managers and communities who use forest areas for residential areas, roads, rice fields, fields, and gardens (Dassir, 2008). Forest resource management conflicts are caused by limited forest resources, while the needs of the community continue to increase. The increase in population will give rise to various interests in the same forest resources, which will cause changes in social, cultural, environmental, economic, legal, and political conditions which create new interests and needs for forest resources (Fuad & Maskanah, 2000). Conflicts that generally occur in forest areas are forest encroachment, land disputes, forest boundary conflicts, and forest logging (Fisher *et al.*, 2017). Tenurial conflict over forest control is described as a phenomenon that occurs due to the domination of the government as the holder of power, giving rise to community resistance (Maring, 2013).

According to Fuad and Maskanah, (2000), conflict can take the form of closed (latent), emerging (emerging), and open (manifest) conflict. It is further explained that based on the level of the problem, conflict consists of vertical conflict and horizontal conflict. According to Dassir, (2008), community claims regarding the use of forest areas give rise to horizontal and vertical conflicts. Horizontal conflict occurs between communities, occurring because of claims based on inheritance rights and management rights, while vertical conflict occurs between communities who use forest areas and the government which prohibits the use of forest areas without permission from the agency that manages forestry, either the central government or the government. area. According to the level of the problem, natural resource conflicts tend to take the form of vertical conflicts between government and society, while according to the subject of the dispute they can take the form of conflicts between



communities, between governments, between government and society, and between companies and society.

From the cases above, it is found that from a typology perspective, tenure conflicts mostly involve the government in charge of forestry, followed by the government which handles land affairs (issuing land tenure rights), and the community which provides intermediary services, managing land ownership (generally called a broker). The second typological pattern is that tenure conflicts do not involve the community (surrounding communities, customs, transmigration and farmers) and local governments only conflict with intermediary communities providing land rights management services. In the Indonesian case, the fact is that regional governments are not given the authority to issue land tenure rights and/or permits.

Tenure conflicts in Brazil still contribute to forest deforestation (Camara *et al.*, 2023). Camara *et al.* (2023) continued that ongoing long-term tenure conflicts contribute to forest deforestation. Herein lies the importance of the Government's role in achieving the goals of controlling deforestation and restoration activities, especially in areas targeted by tenure conflicts. Restoration is needed so that forests can recover, without ignoring the community's interests in access to forest resources.

In Peru and Uganda, the results of a study by Larson *et al.* (2023), focused more on maximizing the conflict resolution approach using Participatory Prospective Analysis in resolving tenure conflicts. Larson *et al.* (2023) continued that the PPA participation approach model is considered relevant to the typology of conflicts that occur in that country.

Furthermore, in Madagascar by Rakotonarivo *et al.* (2023) forest areas with the highest restoration potential are found in countries with weak legal rules and often in countries where land ownership is not widely recognized (ownership). At least 67% of areas with the highest restoration potential are on untitled land, where land ownership is often unclear or contested. Madagascar has not been able to resolve ownership issues which are a challenge in forest restoration.

In Kenya, as reported by Chipofya *et al.* (2020), tenure conflicts occur because land data and area status are still sectoral, thus offering a Local Domain Model (LDM) to integrate land ownership.

The focus of studies on tenure conflicts in China, as reported by Li *et al.* (2023), is that it is still quite weak to witness the presence of the community as subjects in the complexity of tenure cases. This is proven in the study that there is no significant correlation between the partnership management model and the rate of forest land clearing, species diversity, and soil fertility. Therefore, a collective approach is needed in resolving tenure conflict issues.

Vietnam, as reported by Tuan, (2023) in his research, states that land acquisition for the community does not guarantee justice for families who lose land, in some cases it overlaps with forest land, thus contributing to changes in land cover

from forest to other uses. The level of compensation is also unable to resolve existing problems. Aggarwal *et al.* (2021) continued that the Vietnamese government provides legal recognition for communities to utilize forest products, but the dominance of company ownership is still too strong.

Thailand, as mentioned by Jenke and Pretzsch, (2021) is looking for the right format for guaranteeing rights by the Government for its use and management so as not to cause tenure conflicts. Jenke and Pretzsch, (2021) in their study found that both the management organization and forestry regulations did not change after registration, but remained adapted to local forest use. In addition, forest communities are confident that their utilization and management rights are guaranteed. Such registration generally allows communities to prevent further forest encroachment and resolve conflicts if forest officials and police provide support. However, limited financial resources prevent communities from managing and monitoring forests effectively. Tenurial conflicts in Cambodia occur due to pressure on natural resources and access to land (Ratner *et al.* 2014).

Study in Indonesia: Tenure conflict in Indonesia is still an issue that is widely analyzed. Several previous studies analyzed were grouped into three parts, namely from the aspects of causes, approaches to resolution, and challenges. The mapping of the topics discussed in the analysis is shown in Fig.6.

The causes of tenure conflicts in Indonesia that have been collected are differences in interests, lack of synchronization between institutions, overlapping land and forest areas owned, weak supervision, lack of firm implementation of policies/regulations, neglect of indigenous communities, neglect of human rights, and neglect of the role of women around the forest.

The challenges faced in tenure reform in Indonesia are still limited to low public trust, then low public awareness of commitment to conflict resolution. Other challenges are financing (investment) in reforestation activities, injustice regarding access to forest and land resources, and governance is still considered complicated. The resolution approaches offered and tested by previous researchers include the appropriate format (model) for resolving conflicts in all their complexity. Then there is an approach to policy integration between sectors and integration between parties, strengthening social and economic capacity, community trust, the role of independent mediators, and strengthening organizations at the site level such as Forest Management Units (Kesatuan Pengelola Hutan/KPH) and Production Forest Management Units (Kesatuan Pengelola Hutan Produksi/KPHP).

As in other countries, CIFOR in Banjaje *et al.* (2017) states that tenure reform is seen as a middle way in resolving tenure conflicts. Tenurial reform in Asia, including Indonesia, was introduced in 1980, leading to a scheme providing legal provisions for the use of forest products in the 1990s. The case



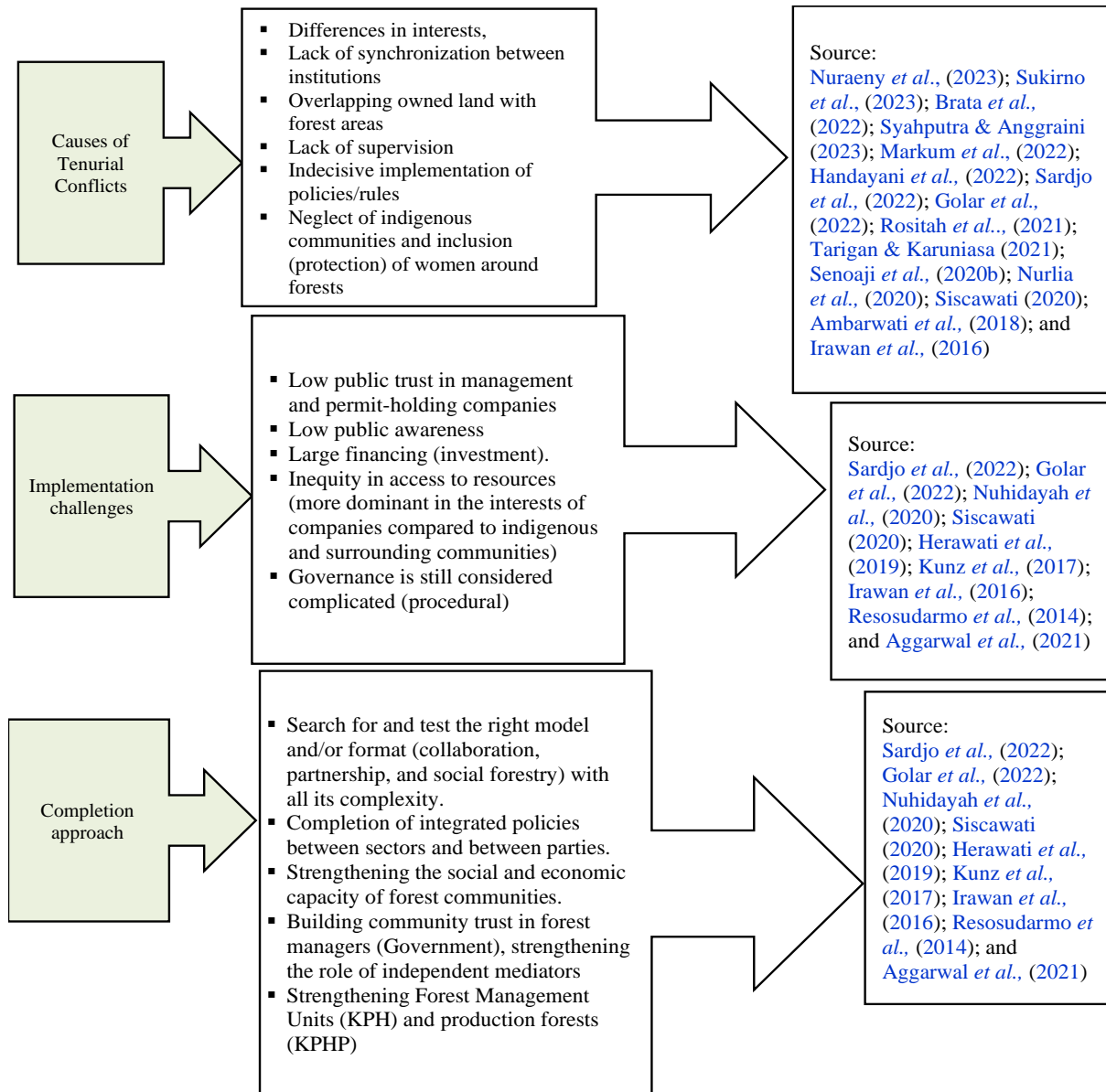


Figure 6. Mapping of Tenurial Conflict Study Themes in Indonesia (Source: Author, 2024)

in Indonesia was then reaffirmed, precisely in 2016, through the community forest (HKm), village forest, community plantation forest (HTR) schemes, and finally social forestry as an integration of the three schemes in question ([Banjaje et al. 2017](#)).

The results of the synthesis from secondary sources (journals and proceedings) in the last decade are then presented with a road map of issues and issues discussed regarding tenure conflicts from 2014-2024 as presented in Fig.7.

From this road map, it will produce important developments that will be discussed by future researchers. The future is expected to produce a strong and tested model for resolving

tenure conflicts from multiple perspectives and interests/ parties.

As information in Fig. 7, the agenda that must be included in further research in analyzing tenure conflicts is "Development of Forest Management Partnership Models in Integrative Tenurial Conflict Resolution". Starting from the word "Development" because there has been other research that presents a partnership model in resolving tenure conflicts, the next research position is to reconstruct the existing model.

The mentioned future research topics are then strengthened by the weaknesses and suggestions of previous research such as [Camara et al. \(2023\)](#); [Nuraeny et al. \(2023\)](#); [Sukirno et al.](#)



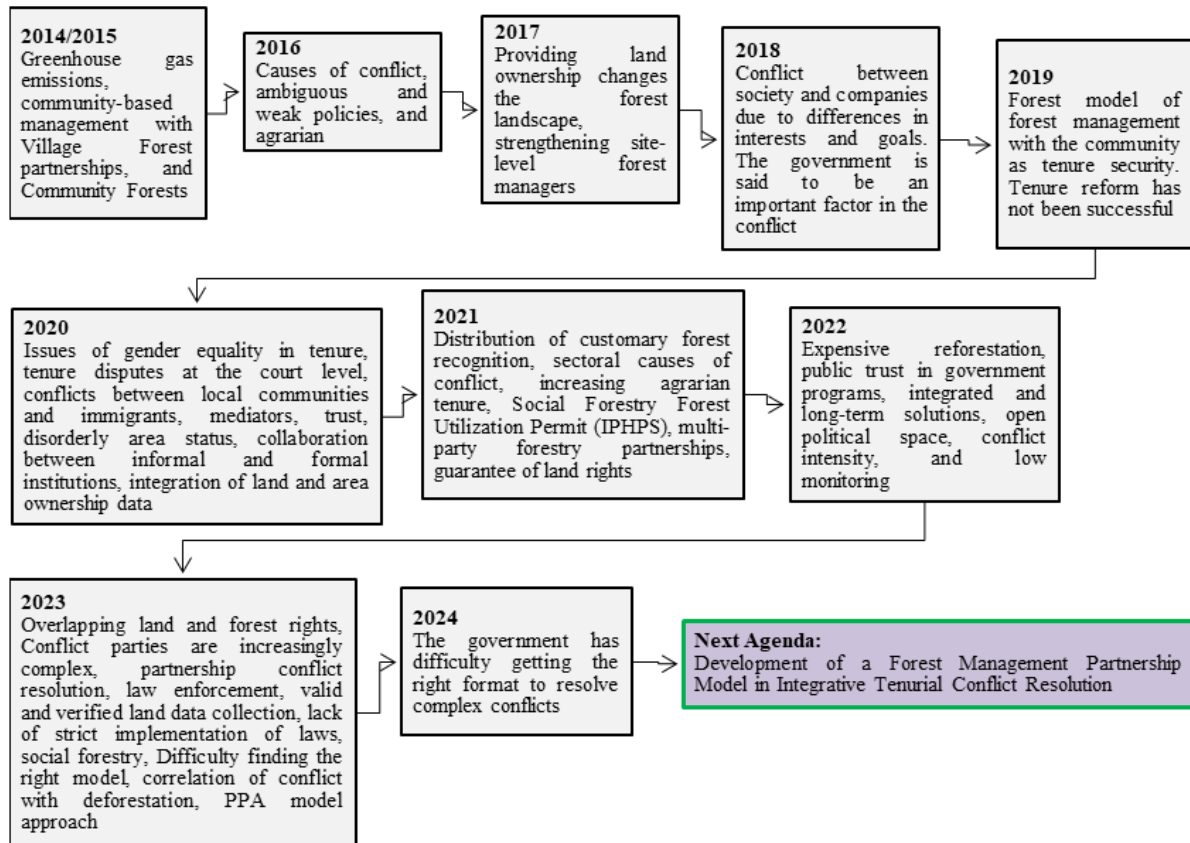


Figure 7. Future Research Road Map (Source: Author, 2024)

(2023); Li *et al.* (2023); Handayani *et al.* (2022); Wulandari *et al.* (2021); Senoaji *et al.* (2020); Syahputra *et al.* (2020); Saputra & Dewata, (2019); Fisher *et al.* (2017); Purnomo & Anand, (2014); and Gamin *et al.* (2014). They suggest that further analysis regarding partnership models, proactiveness, collaboration, collaborative institutions, and regulatory certainty that takes into account between parties, and the resulting model is focused on the socio-economic interests of society to reduce the perception of company dominance. The tenurial conflict resolution development model approach offered is a collaborative approach to partnerships between parties involved in the conflict. This strengthening begins with identifying the parties involved in the tenure conflict, followed by polarization to determine "who and what interests" in the conflict. From here several alternative solutions will emerge that can be accepted by all parties.

Conclusion: Tenurial conflicts in forest areas involving communities and farmers with the government and companies for a decade are still a challenge for forest conservation. This case is common in Latin America, Africa, and Asia, especially in Southeast Asia. The very diverse causes with very diverse actors also add to the complexity of tenure conflicts.

Two conflict resolution approaches have been successfully applied in Africa, namely the Participatory Prospective Analysis (PPA) model and the integration of land and forest area rights data with the Local Domain Model (LDM). These two approaches are recommended and seem relevant to countries that have similar conflict typologies such as those in Southeast Asia, including Indonesia.

Tenurial conflicts are often found in Indonesia with very high intensity and even tend to increase. This occurred in line with the opening of management models that provide rights or permits to use forest areas which are considered to create unfair access to resources, thereby triggering local community protests.

The tenurial conflict resolution development model approach offered is a collaborative partnership approach between parties involved in the conflict. This strengthening begins with identifying the parties involved in the tenure conflict, followed by polarization to determine "who and what interests" in the conflict. From here several alternative solutions will emerge that can be accepted by all parties.

To strengthen the development of the proposed collaboration model, according to the roadmap presented, the future research agenda is to theoretically analyze and test "the development of a forest management partnership model in



resolving tenure conflicts in forest areas". The results of the study in question are not only useful for the research country concerned but also contribute scientifically to be adopted by other countries in relevant contexts.

Limitations: This research was conducted based on secondary data from a systematic review, so the information produced is still macro in nature. Therefore, an explanation of the partnership and collaboration model between parties in resolving conflicts will be followed up in further research.

Suggestions: Suggestion: For policy makers to continue to consider tenure conflicts in every decision-making regarding forest management. At least the study is carried out from the start so as not to cause potential conflict in the future. Furthermore, in terms of decision making to resolve conflicts, this research suggests taking a partnership and collaboration approach between interested parties. Theoretically, researchers will be specifically challenged to formulate a forest management model based on resolving tenure conflicts in order to refine and/or produce a better model than that offered by previous researchers.

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